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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,707	08/28/2003	Daisuke Watanabe	60188-600	6779

7590 05/03/2004

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EXAMINER

WELLS, KENNETH B

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 05/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/649,707

Applicant(s)

WATANABE ET AL.

Examiner

Kenneth B. Wells

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Am

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-8, 10-15, 17-19, 21 and 22 is/are rejected.
- 7) ☒ Claim(s) 5, 9, 16 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. Claims 1, 4, 5, 15 and 16 are objected to because of the following informalities: there is no antecedent basis for "the inverted RF signal" on line 15 of claim 1. Appropriate correction is required. Also in claim 1, "of the" on line 19 should be deleted for better grammatical form. In claims 4, 5, 15 and 16, it makes no sense to recite that the resonating means "further includes" anything because no elements of the resonating means have been previously recited.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first and second current sources recited in claims 8, 9, 19 and 20 must be shown or the feature canceled from the claims. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. Claims 1, 8-10 and 19-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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In claim 1, it is misdescriptive, and thus indefinite, to recite that the second transistor receives an inverted version of the RF signal. The drawings instead only show the RF signal passing through a resistor 24 prior to being received by the second transistor.

The recitation of first and second current sources in claims 8, 9, 19 and 20 is misdescriptive because the specification and drawings do not support this limitation.

In claims 10 and 21, it makes no sense to recite that two current sources are a single current source (this is internally inconsistent).

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 7, 11-15, 18 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakatsuka et al.

As to claims 1-4 and 7, note Fig. 1, where the recited "differential amplifier" reads on circuit 182; the recited "double-balanced mixer" reads on circuit 183; the recited

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"first and second transistors" read on FETs 109 and 110; the recited "capacitor" reads on element 147; and the recited "resonating means" reads on any one or more of the resistors 133-136 (the recitations on the last line of claim 1, and also in claims 2 and 3, are merely the results of applicant's invention and thus cannot be relied upon to distinguish over Nakatsuka et al).

As to claim 11, the specific frequency of the RF input signal also cannot be relied upon to distinguish over Nakatsuka et al because the input signal is not part of the inventive circuitry and thus is not accorded patentable weight (i.e., it is intended use).

Claims 12-15, 18 and 22 are rejected for the same reasons as noted above since they recite the same limitations as in claims 1-4, 7 and 11.

5. Claims 1-4, 6, 11-15, 17 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Long.

As to claims 1-4 and 7, note Fig. 2, where the recited "differential amplifier" reads on BJT's 210 and 212 (the first and second transistors); the recited "double-balanced mixer" reads on BJTs 214, 216, 218 and 220; the recited "capacitor" reads on element 228 (or the unnumbered capacitor connected

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between the base of BJT 212 and ground); and the recited "resonating means" reads on the unnumbered resistors connected directly to the base of BJT 212 and to bias circuit 222 (the recitations on the last line of claim 1, and also in claims 2 and 3, are merely the results of applicant's invention and thus cannot be relied upon to distinguish over Long).

As to claim 11, the specific frequency of the RF input signal also cannot be relied upon to distinguish over Long because the input signal is not part of the inventive circuitry and thus is not accorded patentable weight (i.e., it is intended use).

Claims 12-15, 17 and 22 are rejected for the same reasons as noted above since they recite the same limitations as in claims 1-4, 7 and 11.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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Claims 7, 8, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Long.

As to claims 7 and 18, the replacement of BJTs with FETs would have been obvious to those having ordinary skill in the art who know that mixer circuits are formed using either type of transistor, without any unexpected changes in circuit operation (each having its own known advantages over the other).

As to claims 8 and 19, the recited "first and second current sources" read on elements 254 and 256 of Long's Fig. 2, and the resistors, though not shown, would have been obvious for the well-known purpose of current limiting. Thus, claims 8 and 19 do not define patentably over Long.

7. Claim 5, 9, 16 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

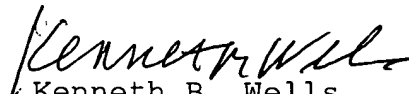
Note especially Fig. 6 of Kay which also appears to anticipate at least independent claims 1 and 12.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth B. Wells whose telephone number is (571)272-1757. The examiner can normally be reached on Monday through Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan, can be reached at (571)272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kenneth B. Wells
Primary Examiner
Art Unit 2816

April 30, 2004